STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forestland proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: **Cat Eye** *Agreement #:* **30-076597**

2. Name of applicant: **Department of Natural Resources**

3. Address and phone number of applicant and contact person:

   Pacific Cascade Region
   601 Bond Road
   PO Box 280
   Castle Rock, Washington 98611-0280
   Phone: (306) 274-2035
   Contact Person: Eric Wisch

4. Date checklist prepared: **7/04**

5. Agency requesting checklist: **Department of Natural Resources (DNR)**

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:* **FY-2004**
   b. *Planned contract end date (but may be extended)* **FY- 2006**
   c. *Phasing:* **Not applicable**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Yes

   Timber Sale

   a) *Site preparation:* **Slash piling & burning and/or herbicide application.**
   b. *Regeneration Method:* **Hand plant Douglas fir and Western Redcedar at approximately 350 trees per acre.**
   c. *Vegetation Management:* **Herbicide and/or hand cut.**
   d. *Thinning:* **The stand will be reevaluated in the future to determine if pre-commercial and/or commercial thinning are required to maximize stand growth.**

   Roads: **Road maintenance assessments will be conducted annually and may include periodic ditch and culvert cleanout, and road grading as necessary.**

   Rock Pits and/or Sale: **Rock pits will be maintained in a safe condition with proper drainage. The rock pits may be used for other current or future projects in the vicinity.**

Other: **Direct sale of firewood from the sale area may occur following harvest completion. Firewood salvage of logging residue may occur following harvest**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐*303 (d) – listed water body in WAU:* ☐*temp.* ☐*sediment* ☐*completed TMDL (total maximum daily load):*
☐*Landscape plan:*
☐*Watershed analysis:*
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan:* **Road Plan available at Pacific Cascade Region**
☒*Wildlife report:* **Memo on Leave Tree Area available at Pacific Cascade Region dated August, 10 2004**
☒*Geotechnical report:* **Slope stability assessment dated August 19, 2004.**
☒*Other specialist report(s):* **Memo for Protocol Survey of Marble Creek dated June, 22 2004.**
☐*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☒*Rock pit plan:* **PH 4000, PH 5000**
☒*Other:* **Spotted owl habitat mapping, marbled murrelet reclassified habitat maps, Forest Practices Activity Maps, WAU map for rain-on-snow areas, Forest Resource Plan (DNR, July 1992), State soil survey, DNR GIS databases, Habitat Conservation Plan (January, 1997), HCP Checklist (attached), Slope Stability Checklist, Planning and Tracking Special Concerns Report and associated maps.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

NO

10. List any government approvals or permits that will be needed for your proposal, if known.

☒*HPA:* **Blanket HPA for type 4 and 5 waters (00-F3520-02)** ☐*Burning permit*
☐*Shoreline permit*
☒*Incidental take permit* **ITP 1168 and PRT 812521** ☒*FPA.* **2910632** ☐ *Other:*

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

Cat Eye timber sale is a four unit, regeneration harvest located within the Marble Creek drainage. This proposal is located within the Lake Merwin and Woodland WAU's, within sub-basins #1 and #11, respectively. Harvest of this timber sale will be accomplished via cable and ground-based logging systems. Cable yarding over or through corridors Type-4 streams will be required.

Sale of Timber
Estimated Total Volume: 3 MMBF
Unit 1: 1 MMBF
Unit 2: 260 MBF
Unit 3: 440 MBF
Unit 4: 1.3 MMBF

Unit area (acres):

Unit 1: Leave Tree Areas: 1
RMZ Acres: 7
Net Harvest Acres: 19
Leave trees clumped: 152

Unit 2: Leave Tree Acres: 1
RMZ Acres: 6
Net Harvest Acres: 5
Leave trees clumped: 48

Unit 3: Leave Tree Acres: 1
RMZ Acres: 6
Net Harvest Acres: 9
Leave trees clumped: 72

Unit 4: Leave Tree Acres: 2
RMZ Acres: 18
Net Harvest Acres: 29
Leave trees clumped: 224

Total Proposal Area Acres (Gross): 104
Total Net Harvest Acres: 62
Total Leave Tree Acres: 5
Total RMZ Acres: 37
Total leave trees clumped: 496
Unstable Slope Acres Removed: 3 (approximate)

Roads to be constructed: 1,200 feet
Roads to be reconstructed: 8,400 feet
Pre-haul Maintenance: 9,500 feet
Road abandonment: 1,800 feet

A minimum 100-foot horizontal distance RMZ has been applied to six Type 4 waters associated with the timber sale. There are three Type 5 streams associated with the timber sale. No buffers are required on type 5 waters, however

one has a Leave Tree clump associated with it and the other is located outside the operable area, leaving one to be harvested within the operable area of this sale, see B.3.a.1 for further details.

A large leave clump in unit 4 contains large remnant old Douglas fir trees. Approximately 10-15 of these trees range in size from 50 to 70 inches in diameter. The leave tree clump was designed to protect these trees.

There is the potential for additional regeneration harvest within the Lake Merwin WAU, although no details are available at this time.

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Overall Unit Objective: The objective of this timber sale is to provide sustainable financial benefit to Trust 04 (Agricultural School) and Trust 07 (Capitol Grant). The production of sawlogs, poles, and pulp material are desired while concurrently manipulating the stand to retain wildlife clumps and legacy trees to develop vertical stand structure and age class distribution. In addition, this stand will be managed in a manner that protects site productivity and maintains the integrity and water quality of adjacent streams.

Pre-harvest Stand Description: Stands are comprised primarily of approximately 70-80 year old Douglas fir, with intermixed Western Hemlock, Western Redcedar, Red Alder and Bigleaf Maple.

Harvest Systems: Harvest of this timber sale will be accomplished via cable and ground-based logging systems. Cable yarding over or through corridors Type-4 streams will be required.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Roadwork is outlined below, with site-specific details in the timber sale road plan available at the Pacific Cascade Region office.

Road Narrative:

Access to Unit 1 will be obtained via the construction of approx 1,200 feet of new temporary road (PH 4000B). This segment of road involves no stream crossings. Two ditch relief culverts will be installed on this road. Access to Unit 4 will be provided through the reconstruction of approximately 8,400 feet of road (PH 5100 and PH 5110). The reconstruction of the PH 5100 will require crossing three Type 4 streams, one Type 5 stream and numerous ditch relief culverts. The PH 5110 spur will consist of the reconstruction of 1600 feet of old grade with several ditch relief culverts.

The last six stations of the PH-5110 road will be abandoned, along with the PH 4000B spur, following operations. Road abandonment will consist of constructing water bars, construction of a road closure trench, grass seeding, outsloping the road prism surface and relocating embankments and sidecast fill material on to the road prism. The remaining portion of the PH 5100 and PH 5110 roads may be used in the future so abandonment is not desired at this time.

There is 9,500 feet of pre-haul road maintenance associated with this timber sale. See road plan for pre-haul maintenance specifications.

Rock Pits:

Rock for road construction on this TBS may come from the development of a new pit along the PH-5100 road, the Studebaker Pit on the PH 5000 road within Section 22 of Township 6 North, Range 2 East, W.M. and the PH 4000 pit, located within Section 29 of Township 6 North, Range 2 East, W.M.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		**1,200**	**<1**	
Reconstruction		**8,400**		
Abandonment		**1,800**	**1**	
Bridge Install/Replace	**0**			**0**
Culvert Install/Replace (fish)	**0**			**0**
Culvert Install/Replace (no fish)	**20**			

Temporary roads: A temporary road is defined in Forest Practice rules as a forest road that is constructed and intended for use during the life of the approved forest practices application. All temporary roads must be abandoned in accordance with WAC 222-24-052(3). The length listed above is also included in the "Construction" and "Abandonment" sections of the chart below.

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map. See also color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description: **West ½ of Section 28, Township 6 North, Range 2 East, W.M.**

b. Distance and direction from nearest town (include road names):

Approximately 1 mile north of Ariel, WA. From Ariel access to the timber sale would be via SR 503, PH 5000, PH 5100 (Unit 4); SR 503 to Frederickson Road, PH 4000 to either the PH 4000A to PH 4000B (Unit 1 – top) or the PH 4500 (Unit 1 – bottom).

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")

WAU Name	WAU Acres	DNR WAU Acres	Sub-Basin Number	Sub-Basin Acres	DNR Sub-Basin Acres	Proposal Acres in Sub-Basin (estimated)
Lake Merwin	**46,440**	**17,590**	**#1**	**1,686**	**1,173**	**99**
Woodland	**38,362**	**5,626**	**#11**	**1,032**	**555**	**5**

The acreages listed above are from DNR /HCP/ WAU data layers and may differ from acreages on WAU and adjacency maps.

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

Known and Observed WAU conditions:

Cat Eye timber sale is a four unit, regeneration harvest located within the Marble Creek drainage. This proposal is located within the Lake Merwin and Woodland WAU's, within sub-basins #1 and #11, respectively.

Lake Merwin WAU:

There are 46,440 acres in the Lake Merwin WAU of which approximately 17,590 acres are managed by the DNR, and the rest are privately owned timberland and a small amount of rural residences and farms. Within the Lake Merwin WAU, approximately 73% of the DNR managed acreage is stocked with stands in excess of 25 years in age. Evidence of mass wasting exists within the Lake Merwin WAU. Deep-seated failures range from small slumps to those covering 10's of acres with the larger ones typically subdued by erosion indicating that little, if any recent movement has occurred. In some sub-basins, where soils are poorly drained, finer-grained, and thick, small earth-flows are apparent within steep draws or swales. There have been shallow failures located in inner gorge, V-notched channels and/or concave hollows near the rain-on-snow zone or superposed on larger deep-seated failures. However, except for several small road associated failures, there is no obvious evidence of recent mass wasting within this particular sub-basin. There is evidence of numerous, small, failures throughout this WAU related to harvest and road activities. Poor road location, construction techniques, and maintenance standards have combined with deep erodible soils, steep slopes, and periodic rain-on-snow events that likely triggered these events. Some streams on steeper slopes show signs of debris flows. Many of these appear to have been triggered by sidecast waste overloading steep slopes, failed drainage structures such as collapsed puncheons, and/or too few cross drains concentrating water into stream draws. Also, occasionally shallow landslides are known to initiate in hollows of young reproduction stands.

There has been periodic harvesting on both state and private lands, in and around the sub-basin. Within the last 10 years there have been approximately 323 acres of timber regeneration harvested, on State land within the sub-basin. To the north of the sub-basin is a piece of land previously regeneration harvested 15-20 years go that was owned by a private industrial landowner, but is now managed by the State. To the southwest of the sub-basin there is a piece of land owned by a private industrial forest landowner that was regeneration harvested about 15 years ago. To the northwest of the sub-basin, partially within the rain-on-snow zone, is a sold State timber sale named Allegro. There is the potential for additional regeneration harvest within this sub-basin in the near future. The majority of the remaining standing timber within the sub-basin is between 55-70 years old. The small private landowners to the southeast of the proposal, within the sub-basin, appear to manage small woodlots, agricultural, residential, and recreation lands. These are predominantly situated within one mile of the Lewis River.

Woodland WAU:

A small portion of the timber sale area is located within the Woodland WAU, sub-basin 11 (<5 acres). The DNR currently manages approximately 5,626 acres (14%) of the total WAU. Private timber companies manage the majority of the WAU. A small portion of the bottomlands and foothills are experiencing land use conversions. Within the Woodland WAU, approximately 55% of the DNR managed acreage is stocked with stands in excess of 25 years in age. Over the last 7 years, the DNR has harvested approximately 1140 even-aged acres and 162 uneven-aged acres in the WAU. In total for all harvest activities, private and DNR, 2150 acres have been harvested within the last seven years. This proposal will slightly increase the even-aged harvest acres for the WAU.

The DNR has acquired through a land exchange with a private timber company, commercial forestland that represents some of the harvested acres now associated with department lands in the WAU. The recent acquisition of lands will further perpetuate the management of forestlands and limit current urban sprawl associated with the area. Further, the exchange means additional protection of upland waters, wildlife, soils and forest road systems in this area.

There is evidence of Both deep-seated and shallow failures within the WAU. Like Lake Merwin WAU, deep-seated failures range from small to those covering 10's of acres. Except for one distinct feature in the lower Colvin Creek basin, the larger deep-seated slides are typically subdued by erosion indicating that little, if any, recent movement has occurred. In some sub-basins, where soils are poorly drained, finer-grained, and thick, small earthflows are located in steep draws or swales. Movement is most likely occurring below the root zone.

Only a small portion of this unit is located in the upper stretches of Husky Creek, which is within the Woodland WAU (portion of Unit #3). Within the WAU, occasional shallow failures have initiated in hollows in young reproduction stands and below roads. Most recently, in the adjacent Colvin Creek sub-basin, a debris slide, forming into a debris flow, initiated in a headwater hollow in reprod and a debris flow initiated on the toe of a deep-seated landslide during a storm event when ditches essentially collected and concentrated runoff and directed and discharged it onto the slope above the slide toe. Within the Husky Creek drainage, several debris slides appear to have initiated within young reproduction stand in steep convergent areas below a road.

Mitigation elements:

To assure this proposal will not contribute to an increased chance of environmental impact, several mitigated measures have been included in the proposal. Type 4 streams within the proposal have been given the appropriate 100-foot buffer widths, in compliance with the 1997 Habitat Conservation Plan and the Forest Practices Rules. To ensure adequate soil protection, soils exposed during road construction will be seeded with grass and/ or straw will be applied. Ground based equipment will be restricted to slopes less than 35% during dry soil conditions. Haul routes for this proposal have also been evaluated for potential impacts to the environment. To assure sediment delivery is controlled during active haul, multiple cross drains, sediment ponds, and other structures will be used to disconnect ditch water from live streams. Ditch water will be routed to the forest floor for filtering prior to entering live watercourses. Also, to preserve structural diversity for wildlife habitat, individual legacy trees, and wildlife tree clumps have been identified for retention throughout the proposal. There are a minimum of eight trees per acre retained to meet the above objectives. Following harvest, the site will be replanted with Douglas fir, and Western Redcedar.

Cable yarding corridors may need to be cut through Type 4 RMZ's as part of this proposal. There are specific restrictions that will be placed on this operation to minimize risk of an increase in sedimentation, mass wasting potential, and wildlife habitat. This operation will require all trees felled within the RMZ be left in place and not disturbed by yarding operations.

Further, this operation will require all logs be fully suspended over Marble Creek (Type 4) and its associated Riparian Management Zone, to protect water quality and reduce potential impacts to soil stability. Mitigation measures of bounding out potentially unstable slopes and headwall areas have been implemented to further lessen the chance of cumulative changes to the surrounding groundwater saturation zone.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☐Hilly, ☐Steep Slopes, ☒Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

Lake Merwin WAU

The Lake Merwin WAU represents 46,440 acres of timberland of which, the State of Washington Department of Natural Resources manages approximately one-third. The Lake Merwin WAU can be described as mountainous with steep slopes rising from drainages becoming gradual along the ridge tops. Elevations range from approximately 500 to 3,800 feet. The climate is moist and temperate with mild, wet winters and warm, dry summers. An average precipitation of 80 inches is received annually with approximately 70 percent occurring between the months of October-March. Approximately twenty-five percent of Lake Merwin WAU is within the rain on snow zone with forty-eight percent of the WAU designated as hydrologically mature across all ownerships. The primary forest type is even-aged Douglas fir/Western hemlock with Pacific silver fir/Noble fir in the higher elevations and Western red cedar/Red alder within the riparian areas.

Woodland WAU

The Woodland WAU contains 37,840 acres of timberland where less than one-sixth is owned by the State of Washington. The Woodland WAU can be described as rugged foothills of the Cascade range with steep slopes ascending from the drainages to gradual along the ridge tops. Inner gorge (steep stream adjacent) slopes are common as are hollows that tend to occur within the headwater areas of tributary streams. Soils are thin on the steeper, upper portions of the backslope where bedrock exposures are common, and thicker accumulations of soil and colluvium are found along toe slopes that tend to be poorly drained. Elevations range from approximately 200 to 2,800 feet. The climate is moist and temperate with mild, wet winters and warm, dry summers. An average precipitation of 80 inches per year is received in the higher elevations while an average of 40 inches per year is received in the bottomlands. The higher elevations are within the Rain-on-Snow zone. The primary forest type is even-aged Douglas fir/Western hemlock with Western red cedar, red alder and maple concentrated in the riparian areas.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

The proposed harvest area is below the rain on snow zone. Timber sale units have an elevation range from 1,000 to 1,800 feet. The topography is typical of the WAU's with slopes ranging from approximately 0 to >75%.

b. What is the steepest slope on the site (approximate percent slope)?

80%

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

The acres listed in the soils table below are for those areas where timber harvest takes place.

State Soil Survey #	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
6100	**V. Cobbly Silt Loam**	**5-30**	**5**	**Insignificant**	**Medium**
6101	**V. Cobbly Silt Loam**	**30-65**	**26**	**Low**	**Medium**
6102	**V. Cobbly Silt Loam**	**65-90%**	**31**	**High**	**Medium**

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) Surface indications:

Although the slope stability model indicated a fairly high potential along the mid-slopes, within the immediate area of the proposal, hollows occurred locally along east-facing and west-facing mid-slopes but few indicators of recent movement were observed. Hollows, some marked by seeps and pistol butted trees, also are found in headwater areas and some more mature hollow forms occur along some toe slopes including in the southern portion of Unit #4. Hardwoods typically seem to mark the transition between upland slopes and the toe slopes. Exposed soils and small-subdued benches suggest the presence of small slumps, earth flows, and debris slides along the slope toes.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

Aerial photo review suggests that small earthflows occur within mature hollows or draws and movement is probably tied to precipitation. Small slumps occur along the toe slopes adjacent to the streams where they may be triggered by undercutting or saturation.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
Associated management activity:

Occasional shallow failures have initiated in hollows in young reproduction stands and below roads crossing convergent areas. Debris slides initiating in steep hollows or below roads can transition into debris flows. Root strength and inappropriate discharge or runoff, are most likely the main triggers. A few crossings have failed most likely due to blockages or fill saturation. Side cast failures have occurred where materials were side cast onto oversteepened slopes.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☐*No* ☒*Yes, describe similarities between the conditions and activities on these sites:*

This proposal is located on slopes and landforms that are typical of the rest of the sub-basin. Unstable features were identified on the original proposal but have been bounded out from any harvest activity. The site does not contain similar conditions of above referenced slide events.

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

<u>Slope stability protection measures:</u>

- **New roads have been located to avoid identified unstable areas**
- **Slopes appearing to exhibit characteristics associated with instability have been removed from the net harvest area**
- **The average Riparian Management Zone (RMZ) width is wider in most segments adjacent to Marble Creek (Type 4) than the HCP required 100-foot horizontal distance. This was done to protect areas of potential instability**

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **<1** *Approx. acreage new landings:* **<1** *Fill source:*

Fill source is native earth material for watercourse crossings.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Yes, some incidental erosion may occur as a result of this proposal, but should be confined to the associated roads and harvest area. See B. 1. h. below for mitigation.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

<1% of the proposal will be in permanent rocked running surface.

h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

<u>Protection measures to reduce erosion associated with roads:</u>

- **Seasonal timing restrictions will be used to minimize road construction activities during wet weather conditions.**
- **Soils exposed during road construction, including any waste areas, will be treated with erosion control measures, such as re-vegetation.**
- **Roads will be maintained as needed to control water runoff and avoid delivery of sediment to live water.**
- **Drainage structures will be properly installed and maintained.**
- **Sediment control measures will be used as necessary during active haul to prevent sediment delivery to water.**
- **Timing restrictions or temporary road shutdown will be used as necessary during active haul to prevent sediment delivery to water.**
- **Periodic maintenance and inspection of the road system to insure proper function.**

<u>Protection measures to reduce erosion associated with active logging operation:</u>

- **Ground yarding will be restricted to slopes less than 35%.**
- **Cable yarding areas will maintain lead-end suspension will be required on slopes greater than 35%.**
- **Ground yarding restrictions are prescribed to minimize soil impacts including compaction and rutting.**
- **Skid trails will be water barred as necessary to minimize sediment delivery to live water.**
- **Full suspension of logs over typed waters to protect stream banks**

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling,* automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Minor amounts of engine exhaust from logging equipment and dust from vehicle traffic and logging equipment.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

None.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map and forest practice base maps.)*

See table below for stream descriptions.

All streams have been typed using the Interim Water Typing criteria in the Forest Practices Rules. See also, Memo for Protocol Survey of Marble Creek dated June 22, 2004.

a) Downstream water bodies: **Lake Merwin**

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Marble Creek	**4**	**1**	**100' Horizontal Distance**
Unnamed	**4**	**5**	**100' Horizontal Distance**
Unnamed	**5**	**3**	**None Required***

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

A minimum 100-foot horizontal distance RMZ has been applied to all Type 4 waters directly adjacent to the harvest area. *Only one of the above listed Type 5 streams will be harvested. One has a Leave Tree clump associated with it and the other is located outside the operable area. A 30 foot limitation zone will be employed according to Forest Practices standards on the Type 5 stream that is harvested.

No wind buffers were deemed necessary for this sale, as adjacent recently harvested stands have shown very little affinity for windthrow.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map.)*
Description (include culverts):

Cable yarding will be required over Type 4 waters as part of this proposal.

Harvest will occur within 200' of both Type 4 and 5 waters while maintaining the appropriate buffer in accordance with the HCP guidelines.

Three Type 4 and two Type 5 watercourse crossings will be required along the PH 5100 road. Culverts placed within the Type 4 waters will be 48" in diameter and the aforementioned Type 5 crossings will employ one 24" and one 30" culvert. Sediment basins, ditch relief culverts and/or hay bales may be used to disconnect ditch water from entering typed waters.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Approximately 1000 cubic yards of native fill material will be required for the three Type 4 watercourse crossings. The area affected in both instances would be that area directly adjacent to the stream.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☐*No* ☒*Yes, description:*

Surface water will be pumped around the proposed Type 4 crossing locations at time of installation, if necessary.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☐*No* ☒*Yes, type and volume:*

Some logging slash may inadvertently enter Type 4 & 5 streams.

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

The potential for surface and/or mass erosion does exist within the sub basins, in headwalls with steep slopes and/or where unstable soils are present. Most of these sites occur near watercourses with deeply incised channels and steep headwall areas. A storm event could result in eroded material entering surface water.

8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*
☐*No* ☒*Yes, describe changes and possible causes:*

Locally steep headwater channels have been scoured by debris flows leaving bedrock channels and over-steepened banks. Also, occasional debris dams will act to retain or store sediment until the dam breaks or the channel adjusts by depositing on eroding.

9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
☐*No* ☒*Yes, explain:*

Sediment from this project may enter typed waters. This activity is expected to have minimal to no effect on water quality due to the retention of riparian buffers, harvest methods that minimize soil disturbance, and road construction timing/ maintenance plans designed to minimize the risk of sediment delivery to streams.

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?*
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☐*No* ☒*Yes, describe:*

There are 2.7 miles of DNR roads per square mile and 4.6 miles of Non-DNR roads per square mile in the Lake Merwin WAU. Within Lake Merwin sub-basin #1, there are 3.9 road miles per square mile (DNR GIS database).

There are 5.3 miles per section in the Woodland WAU; within Woodland sub-basin #11, there are 6.8 road miles per square mile (DNR GIS database).

There are roads that intercept sub-surface flow and deliver water to streams rather than back to the forest floor. The roads associated with this sale have been evaluated and will be fixed as part of the sale or as part of the State's RMAP for this area.

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not,* ***STOP HERE*** *and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☒*No* ☐*Yes, approximate percent of WAU in significant ROS zone.*
Approximate percent of sub-basin(s):

Note: Although the WAU is partly within an ROS, this proposal area is not.

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☐*No* ☒*Yes, describe observations:*

Normally there are no significant changes associated with peak flows within the WAU's. However, large precipitation events, such as the storm of 1996, have made some changes of stream channels. Neither the area within this proposal nor within this sub-basin has revealed no recently observed changes or flooding.

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

This proposal may slightly change the timing/duration/amount of peak flow, and flows rates may increase slightly due to decreased transpiration and interception.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☒*No* ☐*Yes, possible impacts:*

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

The current guidelines for HCP implementation include several prescriptions that address the potential for peak flow impacts. First, there will be a minimum 8 leave trees per acre left on-site to assist in soil protection and provide a natural seed source for the next stand of trees. HCP procedure PR-14-040-006 (Assessing Hydrologic Maturity), assures sub-basin's within a ROS zone that are at risk to contribute to a peak flow problem will be protected. This proposal includes adding additional cross drains and ditch outs on the haul routes. These structures will ensure ditch water is deposited on the forest floor and not allowed to flow directly into typed water.

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Some sub-surface flow may be intercepted by existing road cut banks. It is unlikely that the proposed new road construction will intercept any substantial subsurface flow because new construction will occur at or near the ridge tops.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Minor amounts of oil, fuel and other lubricants may inadvertently be discharges to the ground as a result of heavy equipment use or mechanical failure. No lubricants will be disposed of on-site.

3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*
☒*No* ☐*Yes, describe:*

a) Note protection measures, if any.

Not applicable.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water will be collected in the ditches and culverts. Cross drains and sediment traps will be installed to stop sediment delivery to live waters. All cross drain water will flow through pipes, over energy dissipaters, then onto the forest floor.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Minimal logging slash may enter surface water.

a) Note protection measures, if any.

None.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

See B.1.h above for additional erosion control measures.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☐*cottonwood,* ☐*western larch,* ☐*birch,* ☒other: bitter cherry
☒evergreen tree: ☒*Douglas fir,* ☐*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☐other:
☒shrubs: ☒*huckleberry,* ☒*salmonberry,* ☒*salal,* ☒*other: elderberry, Oregon grape, vine maple*
☐grass
☐pasture
☐crop or grain
☐wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☐skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☒other types of vegetation: sword fern
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")

To the north and east of the proposal area are stands of similar composition as this proposal.

Directly south of the proposal is an approximately 10-year old stand, and to the west of the proposal is an approximately 10-15 year old stand. Both of the aforementioned areas have been planted with Douglas fir, but show natural reproduction of a variety of other coniferous and deciduous species.

2) Retention tree plan:

The leave tree plan was designed in part to accommodate the necessary aerial application (helicopter) of herbicides post-harvest and to allow maximum safety and operational feasibility for cable yarding systems. Leave tree areas were selected to retain large residual trees (those that weren't killed by fire or harvested subsequently) and to protect some of the larger snags. Leave trees located along the main ridge were chosen for their wind-firmness. Leave trees were also left along Type 5 streams.

The total gross acreage for the proposal area (including riparian buffers) is 104 acres. Gross acres not including riparian buffers is 62 acres, so a minimum total of 496 leave trees is required. The total amount of acres in wildlife tree clumps is approximately 5 acres.

c. List threatened or endangered *plant* species known to be on or near the site.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None found				

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Regeneration by planting nursery grown Douglas fir and Western Red Cedar seedlings.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☒hawk, ☐heron, ☐eagle, ☒songbirds, ☐*pigeon,* ☒other: grouse, buzzard
mammals: ☒deer, ☒bear, ☒elk, ☒beaver, ☒other: **coyote, squirrel, chipmunk, mice, vole**
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes,* ☐*caves,* ☐*cliffs,* ☐*oak woodlands,* ☐*balds,* ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None found				

This sale is located within Evolutionarily Significant Units (ESU's) for Lower Columbia River Steelhead and Chinook and Columbia River Chum. However, there are no fish bearing streams near the proposal.

c. Is the site part of a migration route? If so, explain.
☐*Pacific flyway* ☒*Other migration route:* *Explain if any boxes checked:*

This proposal is located in the Columbia River flyway, which is part of the Pacific Northwest forests. Many Neo-tropical birds are closely associated with riparian areas, cliffs, snags and structurally unique trees. Riparian areas add special habitats are protected through implementation of DNR's Habitat Conservation Plan. Migratory waterfowl also use the Columbia River flyway; the area for this proposal id not generally the type of area used for resting or feeding by migratory waterfowl.

This sale is located within Evolutionary Significant Units (ESUs) for Lower Columbia Steelhead and Chinook and Columbia River Chum. However, there are no fish bearing streams near the proposal.

d. Proposed measures to preserve or enhance wildlife, if any:

Remnants and remnant snags >4-feet in diameter or larger will be retained for habitat, as safety allows. A large leave clump containing a number of large older trees is located in the southern portion of harvest unit 4. This leave tree clump contains approximately 10-15 trees ranging in size from 50 to 70 inches in diameter. Leave tree clumps were placed in areas containing wind-firm trees with vertical diversity and defect. Buffers have been left along Type 4 streams to protect water quality and provide wildlife trees and habitat. The natural regeneration of early successional stage plants, along with crop trees, will provide food for a variety of animals.

This activity conforms to the 1992 Forest Resource Plan, the 1997 Habitat Conservation Plan and current Forest Practices rules and regulations.

1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

See question B.5.d, above.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Minimal health hazards due to operating heavy equipment and the minor spillage of fuel and lubricating oils are always present with this type of operation. Contractual clauses require operators to use established safety standards. The risk of forest fire may be increases for approximately two years following harvesting due to logging slash.

1) Describe special emergency services that might be required.

The Washington State Department of Natural Resources, private and rural fire department fire suppression resources; emergency medical or air ambulance for personnel injuries. Hazardous material spills may require Department of Ecology and/or county assistance.

2) Proposed measures to reduce or control environmental health hazards, if any:

Fire equipment will be required on-site during closed fire season. Operations will cease if relative humidity falls below 30%.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Heavy equipment, chain saws, yarding whistled and trucks will produce noise during periods of operation.

3) Proposed measures to reduce or control noise impacts, if any:

None proposed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

- **Timber Production, Forest management**
- **Rock from rock pits, may be sold to other forestland owners for forest road maintenance.**

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

None.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

None.

f. What is the current comprehensive plan designation of the site?

Forest land.

g. If applicable, what is the current shoreline master program designation of the site?

Not Applicable.

h. Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.

No

i. Approximately how many people would reside or work in the completed project?

Not Applicable.

j. Approximately how many people would the completed project displace?

Not Applicable.

k. Proposed measures to avoid or reduce displacement impacts, if any:

None.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

These harvest units, will be reforested with commercial species and retained as forestland.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Not Applicable.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Not Applicable.

c. Proposed measures to reduce or control housing impacts, if any:

None.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?

Does not apply.

b. What views in the immediate vicinity would be altered or obstructed?

None

1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?
☒*No* ☐*Yes, viewing location:*

2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?
☒*No* ☐*Yes, scenic corridor name:*

3) How will this proposal affect any views described in 1) or 2) above?

Not applicable.

c. Proposed measures to reduce or control aesthetic impacts, if any:

RMZ's and leave tree areas will help to reduce aesthetic impacts.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Hunting, mountain biking and hiking.

b. Would the proposed project displace any existing recreational uses? If so, describe:

Recreational activities may be temporarily interrupted during periods of operation on the site.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None found.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None known.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

Not applicable.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

See A.12.b above.

1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?*

No.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Not applicable.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Some new forest roads will be constructed and some existing roads will be improved. See A.11.c for details.

1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*

There will be no impact from this proposal.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

During harvest, 25-30 vehicle trips per day to the sale area may occur. This will take place for three to four months. Upon completion of harvest activities, traffic levels will vary depending on seasonal use.

g. Proposed measures to reduce or control transportation impacts, if any:

None.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

Potential for medical or fire response during timber sale operations.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

None.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: _____ Date: _____
Title

Reviewed by: _____ Date: _____
State Lands Assistant Manager

Comments: _____